Workplace Alaska

Class Specification
Chemist III

Created: 06/06/1997 by Rachel Wilson
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ESTABLISHED

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09/25/2008 - Workplace AK spec revision: Added Census Job Code and AKPAY Code fields; Replaced Category field with Class Outline Category; Updated EEO4, SOC, and Class Code fields; Removed DOT field.

Last Update: **EEO4:** B **SOC:** 19-2031 **Census:** 02

Last Update Comments:

Definition:
The Chemist class series includes positions performing work that requires full professional education and training in the field of chemistry. Work is analytical in nature, involving investigation and interpretation of composition, molecular structure and properties of substances, transformations which they undergo, and the effects of such substances and transformations. Positions conduct a variety of analyses and present authoritative findings and conclusions. Work is primarily performed in laboratories.

Chemists develop, standardize or carry out methods and procedures for the analysis of compounds or substances, most commonly for the purposes of (1) detection, identification and quantification, (2) compliance with law, accepted standards or other requirements, (3) criminal investigation or law enforcement.

As chemistry is a broad field encompassing numerous branches and specialties, so this class is designed to be broad. All professional chemists have in common training and experience equivalent to the college training required for a bachelor's degree in chemistry. They are required to have knowledge of the broad field of chemistry and a working knowledge of basic principles of mathematics and physics, and the ability to relate and apply these principles to their work. The Chemist series covers all positions involving, for example, analytical chemistry, organic chemistry, inorganic chemistry, biochemistry, geochemistry, criminalistics or forensic chemistry, or other specializations depending upon the particular functions and objectives of agencies where the positions are located - - - where these jobs require a professional chemist background.

While the job classes are broadly prescribed, individual positions frequently require specialization (examples above). Beyond the entry level, positions typically require professional training and/or experience in specific area(s) of chemistry, and employee selection will be made on this basis.

Any Chemist position may be required to lead the work of laboratory assistants (nonprofessional, and/or professional assistants at higher levels) or work performed by field personnel, e.g., sample collecting and shipment, routine on-site testing procedures or the like. Lead responsibilities may be assigned on an intermittent or permanent basis, and are limited to a small number of assistants at any time, unless otherwise specified in the following descriptions

Distinguishing Characteristics:
Chemist III is the second journey level. This class is distinguished by:
- experience and skill in performing a broad range of analytical methods, tests and procedures of the laboratory, and presenting authoritative results.
- understanding of the underlying theory, principles and applications of analytical techniques and instruments to apply knowledge of their advantages and limitations in order to determine their applicability to specific problems and to adapt them (or devise new techniques and apparatus) to meet specific needs.
- more difficult and more frequent interpretations, judgments and decisions, such as in the previous example; or the responsibility for verifying results on new methods, tests or procedures, or developing variations to improve them; standardizing methodology to assure accuracy, consistency and acceptability of tests and results obtained.
- routinely interpret and draw conclusions from analytical findings.
- plan and carry out work generally without detailed instructions.
- work is subject to review upon completion, most commonly when results indicate non-compliance, may be disputed, or are based on subjective judgments, or new or

nonstandard techniques.

Chemists III may serve as working leader of a small chemical laboratory staff (e.g. 1 or 2 chemists), or subordinate or section leader in a larger facility, where the nature and variety of activities and staff are at the Chemist I/II level and additional lead and administrative responsibilities are assigned the position. Some technical elements of this section are typically required to carry out the lead responsibilities.

Examples of Duties:

Knowledge, Skills and Abilities:

Knowledge of organic, inorganic, biochemistry, geochemistry or criminalistics sufficient to select methodologies based on different principles of analysis and to use special techniques appropriate for different purposes.

Knowledge of and ability to apply standard methods, procedures and techniques commonly used in chemical analytical work in one or more of the following: air or water quality, food, drugs, toxicology, mineralogy, metallurgy, criminalistics.

Knowledge of related sciences and techniques sufficient to examine substances by nonchemical techniques such as microscopic examinations, physical measurements and mechanical tests.

Knowledge of basic theories, principles, facts and units of measurements in chemistry.

Working knowledge of basic principles of mathematics and physics, and the ability to relate these to laboratory assignments.

Understanding of theoretical and practical limitations of established analytical and testing techniques in the areas of experience.

Understanding of principles and applications of commonly used analytical instruments and ability to determine and adapt as necessary their applicability to specific problems.

Ability to apply a knowledge of chemical structure, reactions and properties in order to determine deviations from the norm.

Ability to use standard laboratory techniques, instruments and methods.

Minimum Qualifications:

Graduation from college with a major in chemistry.
AND
Two years of increasingly responsible professional laboratory experience as a chemist, biochemist, geochemist, criminalist, or closely related position with the State of Alaska or the equivalent elsewhere. Experience must have included independent responsibility for making quantitative and qualitative analysis.

Substitution: Graduate study in any of the chemistry related areas indicated in this section may substitute for the required experience on a year-for-year basis.

Required Job Qualifications:

(The special note is to be used to explain any additional information an applicant might need in order to understand or answer questions about the minimum qualifications.)

Special Note:

Minimum Qualification Questions:

Do you have a bachelor's degree from an accredited college with a major in chemistry?
AND
Do you have two years of increasingly responsible professional laboratory experience as a chemist, biochemist, geochemist, criminalist, or closely related position with the State of Alaska or the equivalent elsewhere? (Experience must have included independent responsibility for making quantitative and qualitative analysis.)

Or Substitution:

Do you have a bachelor's degree from an accredited college with a major in chemistry?
AND
Do you have a combination of two years of graduate study from an accredited college (2 semester or 3 quarter hours equal one month of experience) in chemistry, biochemistry, geochemistry, criminalistics, and/or increasingly responsible professional laboratory experience as a chemist, biochemist, geochemist, criminalist, or closely related position with the State of Alaska or the equivalent elsewhere? (Experience must have included independent responsibility for making quantitative and qualitative analysis.)